

### **Amendments to the Specification**

**Page 5,        please replace the paragraph spanning lines 16-18 with the following rewritten paragraph:**

To meet the above objects, the applicants developed a self-sustaining and cost effective process for the removal of calcium ions from the brine by using marine cyanobacteria at ambient temperature, which comprises the class of ~~*cyanophyceae*~~ *Cyanophyceae* and family *Oscillatoriaceae*.

**Page 5,        please replace the paragraph previously inserted between lines 18 and 19 with the following rewritten paragraph:**

In this method, the simple inventive steps adopted are (i) selecting a specific type of cyanobacterial strains which ~~has the~~ have affinity for calcium ions, (ii) the cyanobacteria after selection ~~is~~ are used in a very small amount, (iii) the cyanobacteria are effective in reducing calcium ions in brine solution with a very high salinity, (iv) the reduction of calcium ions by cyanobacteria is carried out at ambient temperature, (v) the cyanobacteria ~~is~~ are self sustaining and the same can be reused for further removal of calcium from fresh brine, (vi) the process does not require any additional unit operation for separating adsorbed calcium ions.

**Page 6,        please replace the paragraph spanning lines 5-12 with the following rewritten paragraph:**

It has been found that the improved process of the present invention, wherein a marine cyanobacteria is inoculated in sea brine and sub soil brine of 10 to 25.5o Baume (Be), is cost effective and practical method for producing calcium free brine. The marine cyanobacteria used ~~does~~ do not require any external nutrients or energy. It is calcium from brine, which is one of the nutrient elements for the optimum growth, survival and biochemical activity. Thus, it increases in biomass. The uptake of calcium from brine is completed in about 3 hours to 24 hours and can give calcium reduction of about 70 percent. Such a brine (calcium content < 0.022%) is useful intermediate in the preparation of high purity salt.

**Page 7,        please replace the paragraph spanning lines 4-6 with the following rewritten paragraph:**

In still another embodiment of the present invention, the ~~cyanobacteriae~~ cyanobacteria were selected from a class of ~~cyanophyceae~~ Cyanophyceae namely *Lyngbya*, *Oscillatoria*, *Sprulina*, *Anabaena* and *Synechocystis*, which ~~has the~~ have affinity for calcium ions.

**Page 7,        please replace the paragraphs spanning lines 7-26 with the following rewritten paragraphs:**

In still another embodiment of the present invention, the ~~cyanobacteriae~~ cyanobacteria selected have a high salinity tolerance and can function most efficiently.

In still another embodiment of the present invention the selected ~~cyanobacteriae~~ cyanobacteria are self-sustaining and therefore are recycled.

In accordance with the present invention it has been found that euryhaline marine cyanobacteria may be used to reduce the calcium content in the brine at ambient conditions. ~~Cyanobacteriae~~ Cyanobacteria are photosynthetic prokaryote having nitrogen-fixing capability, their halo tolerance and other stress tolerance phenomena are dependent on calcium ions. The Photosynthetic System-II (PS-II) activity also depends on the concentration of calcium in the medium for its growth. The trichomes of this filamentous marine ~~cyanobacteriae~~ cyanobacteria are motile and calcium plays an essential role in the motility of the cyanobacteria. An increase in the inorganic phosphate has been reported by addition of calcium in the cultures of cyanobacteria. There are number of processes in cyanobacteria which are calcium mediated, e.g. sporulation, akinete formation, heterocyst differentiation (frequency), nitrogen fixation, etc. The activation of photosynthetic active centres by calcium suggests a mechanism by which cyanobacteria may enhance photosynthesis to offset decreased photon flux; the enhancement of nitrogen fixation by calcium, through protection of the O<sub>2</sub> labile nitrogenous, could act against the effects of O<sub>2</sub>. In summary there is much to be said and

investigated in support of the hypothesis for calcium mediated regulation of physiological processes in cyanobacteria and as yet no substantial evidence against the concept is existing.

**Amendments to the Abstract**

Please rewrite the Abstract of the Disclosure as set forth on the attached separate sheet.